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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/263,820	03/08/1999	SATORU CHIKUMA	826.1539/JDH	2271

21171 7590 06/13/2003

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EXAMINER

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ART UNIT PAPER NUMBER

2666

DATE MAILED: 06/13/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/263,820

Applicant(s)

CHIKUMA ET AL.

Examiner

Ronald Abelson

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 March 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23 and 24 is/are allowed.
- 6) ☒ Claim(s) 1-10, 12, 14-21 and 25-28 is/are rejected.
- 7) ☒ Claim(s) 11, 13 and 22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 1999 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5, 12, 14-16, and 19, are rejected under 35 U.S.C. 102(b) as being anticipated by Kobayashi (US 4,775,974).

Regarding claims 1, 12, and 14-16, Kobayashi teaches a method and apparatus for a radio communication system wherein the apparatus communicates through a radio channel (fig. 1).

The system comprises a monitoring means for monitoring whether a transmission request for data (call request, fig. 2, col. 2 lines 46 - 49), designating the particular apparatus itself as a transmission destination, has been issued by the particular apparatus or the other apparatus connected thereto (fig. 3 box 21, col. 3 lines 19-22).

The system comprises a generation means for generating a process to serve as a reception destination for the data and generating a buffer in correspondence with the process, when the monitoring means has detected the issue of the transmission request (fig. 5 element 34, box 87, col. 6 lines 6 - 36).

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The system comprises a transfer means for transferring the data from a transmission request source to the process in accordance with communication of virtual circuit type (col. 4 lines 13 - 15), so as to store in the buffer the data transmitted by the transmission request source (col. 1 line 64 - col. 2 - line 6).

The system comprises a transmission means for transmitting the data stored in the buffer to the other apparatus through the radio channel (fig. 5 box 87, fig. 3 box 16).

Regarding claims 12 and 15, in addition to the limitations previously mentioned, a reception means (fig. 3 box 25, 17).

Regarding claims 5 and 19, a specific means for specifying a sequence number of the transmission data at a point of time of the disconnection, when the radio channel has been disconnected, wherein the transmission means restarts the data transmission from the data transmission of the sequence number specified in the specification means, when the radio channel has been re-connected (fig. 5 box 81, col. 5 lines 42 - 54).

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3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claim 25 is rejected under 35 U.S.C. 102(e) as being anticipated by Rothschild (US 5,822,523).

Regarding claim 25 Rothschild teaches a method and apparatus for data communication method for a radio communication system (wide area communications network, col. 8 lines 22 - 24) wherein apparatus communicate through a radio channel (fig. 11 box 155, col. 12 lines 53-54).

The system comprises transmitting data requested by a transmission source (host, col. 12 lines 53-54), in accordance with communications of virtual circuit type (col. 7 lines 18-20) by employing a protocol of an upper layer (fig. 11 box 151) with respect to layers of the radio channel (fig. 11 box 155).

The system comprises transmitting the data transmitted by employing the protocol of the upper layer (fig. 11 box 151), through the radio channel by employing a protocol of the layers

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of the radio channel fig. 11 box 155, col. 12 lines 53-54).

Note, it is inherent that a protocol exists at the physical layer.

The system comprises transmitting the data transmitted by employing the protocol of the layers of the radio channel, to a transmission request destination in accordance with the virtual circuit type communications by employing the protocol of the upper layer with respect to the layers of the radio channel. At the transit side, the data goes from the upper layer to the physical layer. At the receiver side, the data goes from the physical layer to the upper layer.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sridhar (US 6,266,701) in view of Rothschild (US 5,822,523).

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Shridhar teaches a radio communication system (fig. 6).

The system comprises communications of virtual circuit type (IP, col. 8 lines 10-12).

The system comprises a client (fig. 6 box 610), gateway (fig. 6 box 612), server (fig. 6 box 616, 636, 640), wherein the client and gateway are connected through a radio channel (see connection between 610 and 663), and the gateway and server are connected through the Internet (fig. 6 box 100).

The system comprises a first inter-process communication means for transmitting and receiving data which are exchanged between the client and the server, by communications of virtual circuit type in conformity with the protocol of the upper layer with respect to the layers of the radio channel (TCP, col. 8 lines 12-13).

The system comprises a second inter-process communication means for transmitting and receiving data which are exchanged between the client and server, between the second inter-process communication means and the server through an Internet by the virtual circuit type communications in conformity with the protocol of the upper layer with respect to the layers of the radio channel (ISO layer 3, col. 8 lines 10-12).

The system comprises a third inter-process communication means for transmitting and receiving data which are exchanged

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between the client and the server, between the third inter-process communication means and the gateway through the Internet, in conformity with the protocol of the upper layer with respect to the layers of the radio channel (TCP, col. 8 lines 12-13).

Shridhar is silent on the first, second, and third radio communication means.

Rothschild teaches the relationship between the radio communication means (fig. 11 box 155) and the upper level protocol (fig. 11 box 151).

Therefore it would have been obvious to one of ordinary skill in the art, having both Shridhar and Rothschild before him/her and with the teachings [a] as shown by Shridhar, a communication system using a level three protocol comprising virtual circuits connecting a client to a server through a gateway and Internet, and [b] as shown by Rothschild, the relationship between the radio communication means and the upper level protocol, to be motivated to modify the system of Shridhar by transmitting level 3 data between locations using the radio channel. Adhering to the ISO model can perform this. This would improve the system since the system could be easily integrated into larger systems since the ISO model is an industry accepted standard.

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Regarding claim 26, see limitations for claim 27.

7. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Shridhar and Rothschild as applied to claim 27 above, and further in view of Mourad (US 6,078,961).

As previously mentioned, see rejection for claim 27, the combination of Shridhar and Rothschild teaches a radio communication network.

Shridhar fails to teach a public network connecting the client and the gateway.

Mourad teaches a public network (fig. 1 box 5) connecting the client (fig. 1 box 16) and the gateway (fig. 1 box 6).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Shridhar and Rothschild and Mourad before him/her and with the teachings [a] as shown by the combination of Shridhar and Rothschild, a communication system using a level three protocol comprising virtual circuits connecting a client to a server through a gateway and Internet, and [b] as shown by Mourad, a public network connecting the client and the gateway, to be motivated to modify the system of the combination of Shridhar and

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Rothschild by connecting client (Shridhar: fig. 6 box 610) to a PSTN and connecting the PSTN to the Gateway (fig. 6 box 612). Using the appropriate adapters to interconnect the client to the Gateway via the PSTN can perform this. This would improve the system by allowing the client to interconnect with distant systems.

8. Claims 2, 6, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi as applied to claims 1 and 16 above, and further in view of Rothschild.

Regarding claims 2 and 17, Kobayashi is silent on the transmission means transmits transmission destination information to be designated, in accordance with a protocol of an upper layer with respect to layers of the radio channel

Rothschild teaches the transmission means transmits transmission destination information to be designated, in accordance with a protocol of an upper layer with respect to layers of the radio channel (fig. 11 box 152, col. 12 line 64 - col. 13 line 1).

Therefore it would have been obvious to one of ordinary skill in the art, having both Kobayashi and Rothschild before him/her and with the teachings [a] as shown by Kobayashi, a radio communication system comprising a monitoring means for

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monitoring whether a transmission request for data, designating the particular apparatus itself as a transmission destination, has been issued by the particular apparatus or the other apparatus connected thereto, and [b] as shown by Rothschild, the transmission means transmits transmission destination information to be designated, in accordance with a protocol of an upper layer with respect to layers of the radio channel, to be motivated to modify the system of Kobayashi to conform to the ISO model. This modification can be performed in software. This would improve the system since the system could be easily integrated into larger systems since the ISO model is an industry accepted standard.

Regarding claim 6, a specific means for specifying a sequence number of the transmission data at a point of time of the disconnection, when the radio channel has been disconnected, wherein the transmission means restarts the data transmission from the data transmission of the sequence number specified in the specification means, when the radio channel has been re-connected (Kobayashi: fig. 5 box 81, col. 5 lines 42 - 54).

9. Claims 3, 7, and 18 rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi as applied to claims 1 and 16 above, and further in view of Shimojo (US 6,490,248).

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Regarding claims 3 and 18, Kobayashi fails to teach a detection means for detection a data storing state of a buffer, wherein the transfer means controls a communication speed of the virtual circuit type communications in accordance with a detected result of the detection means.

Shimojo teaches a detection means for detection a data storing state of a buffer, wherein the transfer means controls a communication speed of the virtual circuit type communications in accordance with a detected result of the detection means (backpressure signal, fig. 2 box 101, col. 4 lines 8-10).

Therefore it would have been obvious to one of ordinary skill in the art, having both Kobayashi and Shimojo before him/her and with the teachings [a] as shown by Kobayashi, a radio communication system comprising a monitoring means for monitoring whether a transmission request for data, designating the particular apparatus itself as a transmission destination, has been issued by the particular apparatus or the other apparatus connected thereto, and [b] as shown by Shimojo, a detection means for detection a data storing state of a buffer, wherein the transfer means controls a communication speed of the virtual circuit type communications in accordance with a detected result of the detection means, to be motivated to modify the system of Kobayashi by implementing the backpressure

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signal generating apparatus of Shimojo (fig. 2) at the buffer of Kobayashi (fig. 5) box 87). This would improve the system by modifying the input transmission rate to prevent buffer overflow/underflow.

Regarding claim 7, a specific means for specifying a sequence number of the transmission data at a point of time of the disconnection, when the radio channel has been disconnected, wherein the transmission means restarts the data transmission from the data transmission of the sequence number specified in the specification means, when the radio channel has been re-connected (Kobayashi: fig. 5 box 81, col. 5 lines 42 - 54).

10. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Kobayashi and Rothschild as applied to claim 2 above, and further in view of Shimojo (US 6,490,248).

Regarding claim 4, the combination of Kobayashi and Rothschild fails to teach a detection means for detection a data storing state of a buffer, wherein the transfer means controls a communication speed of the virtual circuit type communications in accordance with a detected result of the detection means.

Shimojo teaches a detection means for detection a data storing state of a buffer, wherein the transfer means controls a

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communication speed of the virtual circuit type communications in accordance with a detected result of the detection means (backpressure signal, fig. 2 box 101, col. 4 lines 8-10).

Therefore it would have been obvious to one of ordinary skill in the art, having both the combination of Kobayashi and Rothschild and Shimojo before him/her and with the teachings [a] as shown by the combination of Kobayashi and Rothschild, a radio communication system comprising a monitoring means for monitoring whether a transmission request for data, designating the particular apparatus itself as a transmission destination, has been issued by the particular apparatus or the other apparatus connected thereto, and [b] as shown by Shimojo, a detection means for detection a data storing state of a buffer, wherein the transfer means controls a communication speed of the virtual circuit type communications in accordance with a detected result of the detection means, to be motivated to modify the system of Kobayashi by implementing the backpressure signal generating apparatus of Shimojo (fig. 2) at the buffer of Kobayashi (fig. 5) box 87). This would improve the system by modifying the input transmission rate to prevent buffer overflow/underflow.

Regarding claim 8, a specific means for specifying a sequence number of the transmission data at a point of time of

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the disconnection, when the radio channel has been disconnected, wherein the transmission means restarts the data transmission from the data transmission of the sequence number specified in the specification means, when the radio channel has been re-connected (Kobayashi: fig. 5 box 81, col. 5 lines 42 - 54).

11. Claims 9, 10, 20, and 21 rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi as applied to claims 1 and 16 above, and further in view of Shimojo (US 6,490,248).

Kobayashi fails to teach a plurality of buffers are generated by the generation means, the transmission means reads out data successively from the buffers of higher priority levels in accordance with priority levels set for the respective buffers and transmits the read data.

Shimojo teaches a plurality of buffers are generated by the generation means, the transmission means reads out data successively from the buffers of higher priority levels in accordance with priority levels set for the respective buffers and transmits the read data (fig. 2 box 102, 101-1, 101-2, 101-3).

Therefore it would have been obvious to one of ordinary skill in the art, having both Kobayashi and Shimojo before him/her and with the teachings [a] as shown by Kobayashi, a

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radio communication system comprising a monitoring means for monitoring whether a transmission request for data, designating the particular apparatus itself as a transmission destination, has been issued by the particular apparatus or the other apparatus connected thereto, and [b] as shown by Shimojo, a plurality of buffers are generated by the generation means, the transmission means reads out data successively from the buffers of higher priority levels in accordance with priority levels set for the respective buffers and transmits the read data, to be motivated to modify the system of Kobayashi by replacing the single buffer of Kobayashi (fig. 5 box 87) with multiple buffers (fig. 2 101-1, 101-2, 101-3) and a class separation unit (fig. 2 box 102). This would improve the system by allowing for higher priority data to be processed first.

Regarding claims 10 and 21, by transmitting data according to priority, the higher priority buffers have shorter transmission cycles because the higher priority buffers are processed first.

Allowable Subject Matter

12. Claims 23 and 24 allowed.

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Claims 11, 13, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter.

Regarding claim 11, 13, and 22, nothing in the prior art of the record teaches or fairly suggests a cache memory, which stores therein data, sent back in response to the data transmission of the transmission means, in combination with the other limitations listed in the claim.

Regarding claim 23, nothing in the prior art of the record teaches or fairly suggests monitoring if the data conforms to a protocol suspended in layers of the radio communication, in combination with the other limitations listed in the claim.

Response to Arguments

13. Applicant's arguments, see pg. 4-5, filed 3/3/03, with respect to the rejection(s) of claim(s) 1-28 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Kobayashi, Rothschild, Shimojo, Sridhar, and Mourad.

Conclusion

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ronald Abelson whose telephone number is (703) 306-5622. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on (703) 308-5463. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-9600.

ra
Ronald Abelson
Examiner
Art Unit 2666

June 5, 2003

DW
DANSTON
PRIMARY EXAMINER